CRITICAL VIEWS & NEWS

OTITIS MEDIA WITH EFFUSION IN YOUNG CHILDREN Guideline Overview

Agency for Health Care Policy and Research
Rockville, Maryland

The NMA expresses its appreciation to the Agency for Health Care Policy and Research for its generosity in granting permission to reproduce, in part, its otitis media with effusion in young children guideline overview.

—The Editor

BACKGROUND

Otitis media, an inflammation of the middle ear, is a common ailment in children, particularly younger children. It is the most frequent diagnosis made at visits to US office-based physicians by children under the age of 15. Moreover, these office visits have shown a dramatic increase in recent years. It is estimated that 24.5 million visits to office-based physicians were made in 1990, a 150% increase over the number of visits in 1975.

One type of otitis media that is estimated to occur in 25% to 35% of cases is "otitis media with effusion," or OME. This condition is characterized by fluid in the middle ear, but with no signs or symptoms of infection, such as pain or fever. OME often occurs in both ears. In most cases, OME spontaneously resolves with no treatment after several months. OME is not the same as "acute otitis media," another ear condition that commonly occurs in early childhood, which is characterized by pain and fever.

Many children with OME experience fluctuating mild to moderate conductive hearing loss that goes away when the OME resolves. While research has established that hearing loss in very young children is associated with delays in speech development and language acquisition, there is no direct evidence that the transient or fluctuating hearing loss that occurs with OME causes these developmental delays. The fact that this possibility exists, however, and the fact that OME is so common during the years 1 through 3, the crucial period for speech and language development, were critical in developing this guideline.

ADDRESSING THE PROBLEM

In 1991, the Agency for Health Care Policy and Research, a component of the Public Health Service, awarded a contract to develop a clinical practice guideline on the diagnosis, treatment, and management of OME in young children. A multidisciplinary panel of private-sector experts was convened to assist the contractor in developing the guideline. This topic was selected for the following reasons:

- Otitis media is prevalent in the United States.
- There are widespread variations in practice patterns

OME Guideline Panel: Sylvan Stool, MD (Co-Chair), Children's Hospital of Pittsburgh; Alfred Berg, MD, MPH (Co-Chair), University of Washington, Seattle; Stephen Berman, MD, Children's Hospital, Denver; Cynthia Carney, BA, Washington, DC; James Cooley, MD, Harvard Community Health Plan; Larry Culpepper, MD, MPH, Brown University; Roland Eavey, MD, Massachusetts Eye and Ear Infirmary; Lynn Feagans, PhD, Pennsylvania State University; Terese Finitzo, PhD; Methodist Hospital of Dallas, Ellen Friedman, MD, Baylor College of Medicine; Janice Goertz, RN, CPNP, Pediatric Centers of SW Michigan; Allan Goldstein, MD, Battle Creek Health Systems; Kenneth Grundfast, MD, Children's National Medical Center, Washington, DC; Douglas Long, MD, Boothbay, ME; Loretta Macconi, RN, MSW, CRNP, School District of Philadelphia; LoBirtha Melton, RN, MPA, Alameda County Medical Center, Oakland, CA; Joanne Roberts, PhD, University of NC at Chapel Hill; Jessie Sherrod, MD, University of California at Los Angeles; Jane Sisk, PhD, Columbia University School of Public Health.

OME Consortium: Robert H. Sebring, PhD, American Academy of Pediatrics, Elk Grove Village, IL; Maureen Hannley, PhD, American Academy of Otolaryngology-Head & Neck Surgery, Alexandria, VA; Hanan S. Bell, PhD, American Academy of Family Physicians, Kansas City, MO.

among generalists and specialists who treat OME.
- There is debate about the appropriateness and timing of common treatments for OME.
- The financial and other costs of managing and treating OME are very high.

The panel had several major objectives in developing the guideline:
- Review existing evidence on OME and develop recommendations to improve the diagnosis, treatment, and management of this condition in young children.
- Educate health professionals, parents, and families of patients with OME, and other consumers about the nature and treatment of OME.
- Highlight areas in which the available scientific evidence is sufficient to draw conclusions about the best ways to diagnose and manage OME in young children, as well as to point out areas in which further research is necessary.

RECOMMENDATIONS

The panel's recommendations fall into two broad areas: 1) diagnosis of OME and evaluation of hearing, and 2) management of OME. In addition, the panel discusses several other issues of interest, including the relationship to OME of allergy and certain environmental factors, such as cigarette smoke. The "target patient" for the panel's recommendations is an otherwise healthy child 1 through 3 years old who has no craniofacial or neurologic abnormalities or sensory deficits.

Diagnosis of OME

The diagnosis of OME in a child should begin with a thorough physical examination and medical history. The medical history should record the nature of OME symptoms and when they began, any previous treatments for the condition, and compliance with treatments. In addition, the health care provider should take note of any environmental factors, such as passive smoking, that have been shown by some epidemiological studies to be related to OME.

OME can be diagnosed definitively only when the presence of fluid in the middle ear is confirmed. The most accurate and useful method for determining the presence of fluid is pneumatic otoscopy, which is recommended because it allows the clinician to inspect the ear canal and eardrum as well as to observe the mobility of the eardrum. Otoscopy alone is not recommended because the method does not measure the mobility of the eardrum. Tympanometry, a test that provides a quantitative measurement of eardrum mobility, is recommended as a useful complement to pneumatic otoscopy.

Management of OME

The principal guiding factors in the management and treatment of OME in young children are the length of time the OME has persisted and whether or not there is any hearing loss. The panel suggests that initially observation may be preferable to more aggressive treatments in the otherwise healthy child. More intensive intervention can be used after an initial period of observation if circumstances warrant. Specifically, the panel recommends:

Initial treatment for OME
- Either observation or antibiotic therapy is an option.
- Parents should be encouraged to control environmental risk factors.
- Myringotomy with or without insertion of tympanostomy tubes *should not* be performed.

Treatment for OME that has lasted 3 months
- The child should undergo a hearing evaluation.
- If hearing is normal, either observation or antibiotic therapy is an option.
- If the child has bilateral hearing deficits of 20 db hearing threshold level or worse in the better-hearing ear, either antibiotic therapy or myringotomy with tubes is an option.
- Parents should be encouraged to control environmental risk factors.

Treatment for OME that has lasted 4-6 months with bilateral hearing loss
- Myringotomy with tube insertion should be performed if the child has hearing threshold levels of 20 db or worse in the better-hearing ear.

In addition to these recommendations, the panel states that in light of current scientific evidence, the following are *not recommended* as treatments for OME in children:
- Steroid therapy (at any age).
- Antihistamine/decongestant therapy (at any age).
- Adenoidectomy in the absence of adenoid pathology (ages 1 through 3).
- Tonsillectomy (at any age).

Other Issues in the Management of OME

The panel reviewed a number of studies proposing theories connecting allergy and the development of OME, but there were not enough data available to fully support or explain a connection between the two. The

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KEY POINTS ABOUT OTITIS MEDIA WITH EFFUSION

For Health Care Providers

- There are a number of possible approaches to the management and treatment of CME. The guiding principles should be accurate diagnosis of the condition, length of time the condition has existed, whether there is any accompanying hearing loss, and parent preference.
- Parents, families, day care providers, and other caregivers of patients are an essential link in effective treatment and management of OME. Health care practitioners should work with these individuals to help them understand the characteristics of OME, the treatment options that are available, and effective methods for ongoing management of the condition.
- Providers should learn more about OME; read the *Clinical Practice Guideline, Number 12, Otitis Media with Effusion in Young Children* and its companion *Quick Reference Guide;* give the *Parent Guide, Middle Ear Fluid in Young Children* to parents of patients so that they can learn more about OME and its management.

For Consumers

- OME and acute otitis media are not the same. OME occurs when there is fluid in the middle ear, but no signs or symptoms of infection. OME usually occurs in both ears. Acute otitis media, on the other hand, is an infection in the middle ear that is often accompanied by fever and sharp ear pain.
- In most cases, OME goes away on its own after several months, without any treatment. Any hearing loss associated with the OME also goes away.
- Some research has indicated a relationship between OME and certain environmental factors—for example, smoking and close contact with children who may be sick, such as occurs in group day care conditions. Talk to your health care provider about whether changes in any of these environmental factors could help a child with OME.
- Learn more about OME. Order the consumer booklet *Middle Ear Fluid in Young Children,* which contains information about OME and treatment options.
- The Agency for Health Care Policy and Research also has a *Clinical Practice Guideline* and a *Quick Reference Guide* on OME for your health care provider.

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panel, therefore, makes no recommendations on this issue, but feels that the linkage between allergy and OME is plausible enough to warrant further research.

FINDINGS

The panel's major findings were that:

- OME occurs frequently in young children.
- In most cases, OME spontaneously resolves after a period of 3 to 6 months.
- OME can produce mild to moderate transitory or fluctuating hearing loss; however, there is no direct evidence that the hearing loss associated with OME causes delays in speech or language development in young children.
- Accurate diagnosis is an important first step in the appropriate management of OME.
- There are a number of treatment options for patients with OME. Treatment should be determined by how long the child has had fluid in the middle ear, whether there is any hearing loss, and parent preference.

GUIDELINE DEVELOPMENT

The Agency for Health Care Policy and Research awarded a contract to the American Academy of Pediatrics, who worked with the American Academy of Family Practitioners, and the American Academy of Otolaryngology-Head and Neck Surgery as a consortium to develop a clinical practice guideline on OME in young children. A 19-member private-sector, multidisciplinary panel was convened to assist the contractor in developing the guideline. The panel included pediatricians, family physicians, otolaryngologists, an infectious disease specialist, nurses, audiologists, speech/language pathologists, hearing specialists, a psychologist, a health policy analyst, and a consumer representative. An exhaustive literature review was conducted to survey the scientific and clinical knowledge related to otitis media. The panel reviewed almost 1400 abstracts and 378 full-text articles in developing the guideline. The panel also held an Open Meeting to solicit further information from concerned individuals and organizations; circulated drafts of the guideline to experts to ensure accuracy and thoroughness of the literature cited. Comments from these groups were used in preparing the final guideline documents.

FOR FURTHER INFORMATION

The guideline is available free of charge in several forms:

- The *Clinical Practice Guideline,* intended for health care providers, contains a discussion of OME in young children and the panel's findings and recom-

mendations with supporting evidence and references. It also includes an algorithm that summarizes the approach to diagnosis and management of OME.

- The *Quick Reference Guide,* also intended for health care providers, is a brief summary of and companion volume to the *Clinical Practice Guideline.* It provides highlights of patient management and presents the algorithm.
- The *Parent Guide* is a brochure for consumers, published in English and Spanish, that describes the condition, outlines the main evaluation and treatment options, and provides guidance on working effectively with health care providers.

To order these publications, call toll free 800-358-9295, or write: OME Guideline, AHCPR Publications Clearinghouse, PO Box 8547, Silver Spring, MD 20907.